

Date: Fri, 11 Feb 94 04:30:38 PST
From: Ham-Equip Mailing List and Newsgroup <ham-equip@ucsd.edu>
Errors-To: Ham-Equip-Errors@UCSD.Edu
Reply-To: Ham-Equip@UCSD.Edu
Precedence: Bulk
Subject: Ham-Equip Digest V94 #28
To: Ham-Equip

Ham-Equip Digest Fri, 11 Feb 94 Volume 94 : Issue 28

Today's Topics:

 386DX/25 PC for sale
 Alinco DJ580 and car power
 Help: TS430 and SM220 monitor
 Intermodulation
 KENWOOD TH77E VS STANDARD 720
 LOOKING FOR KENWOOD TS-950S OR TS-950SD
 RC-1000 Repeater Controller
 TS430: 80 M RFI problem
 Vertical Antennas (2 msgs)
 WANTED: Kenwood TS-950SD or TS-950S
 Want Yeasu ft707

Send Replies or notes for publication to: <Ham-Equip@UCSD.Edu>
Send subscription requests to: <Ham-Equip-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Equip Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-equip".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 8 Feb 1994 15:58:02 -0500
From: ihnp4.ucsd.edu!sdd.hp.com!spool.mu.edu!howland.reston.ans.net!torn!nott!
gandalf.ca!gandalf.ca!not-for-mail@network.ucsd.edu
Subject: 386DX/25 PC for sale
To: ham-equip@ucsd.edu

System includes 8MB RAM, 80MB SCSI HD, 5.25 1.2MB floppy and ATI SVGA
video card. Asking \$500. If interested, call (609)-424-8700,
x5904 or email bob@gandalf.ca.

Date: 9 Feb 1994 10:42:52 -0500
From: ucsnews!sol.ctr.columbia.edu!howland.reston.ans.net!news.intercon.com!
digex.net!digex.net!not-for-mail@network.ucsd.edu
Subject: Alinco DJ580 and car power
To: ham-equip@ucsd.edu

My Alinco DJ580 is my only piece of ham equipment and thus I do not want to do anything that might destroy it. But I would like to be able to hook it into the car's cigarette lighter to both save the battery and get more wattage out of it. I have the necessary plug that fits into the DC in socket on the side of the radio, as well as a plane-jane cigarette lighter plug. What type of fuse is recommended for this, and is there any other circuitry that is advisable to connect between the radio and the car?

Also, I have a 12V 4A regulated power supply powered by household current. Would the same precautions apply to connecting the radio to it as would apply to connecting it to the car's power?

Date: Wed, 9 Feb 1994 15:09:20 GMT
From: cs.yale.edu!csusys.ctstateu.edu!white@yale.arpa
Subject: Help: TS430 and SM220 monitor
To: ham-equip@ucsd.edu

Looking for info on how a SM220 Station Monitor would work with my TS430S HF rig..... I haven't been able to find ANY information on this. Thx, 73 de N1QVE. Harry.
Email to white@csusys.ctstateu.edu

Date: 6 Feb 1994 00:16:06 GMT
From: qualcomm.com!vixen.cso.uiuc.edu!howland.reston.ans.net!usenet.ins.cwru.edu!
odin!trier@network.ucsd.edu
Subject: Intermodulation
To: ham-equip@ucsd.edu

There are a couple of types of interference that people call "intermod" but only one is intermodulation! The other two that I've seen called "intermod" are imaging and front-end overload.

Imaging is caused by the frequency-shifting performed in a receiver. Suppose the mall security is on 464.575, a ham repeater is on 443.175, and your receiver has an intermediate frequency (IF) of 10.7 MHz. When you try to receive mall security, the radio will mix the signal from the antenna with a 453.875 MHz local oscillator's signal, in order to

generate the 10.7 MHz IF it needs for the later stages of reception. (Subtract 453.875 from 464.575 and you will get 10.7 MHz, assuming I made no arithmetic errors!) However, the mixer will receive any signal that is 10.7 MHz away from 453.875. That means it will receive 443.175 as well!

That is "imaging" -- two frequencies for the price of one. In a narrow-band receiver, a filter on the front end will remove the undesired signal. For example, a good ham-band radio will filter out 450 MHz on up, removing the mall security from contention. However, your scanner is inherently wide-band, so it can't filter as well. Lots of scanners have problems with images.

Front-end overload is simpler: If a signal is too strong, it may wind up overloading the receiver, making the mixing and filtering moot. The result is that you hear that too-strong station no matter what. You may see this on a car radio or a scanner when right next to a broadcast transmitter. In narrowband receivers, better front-end filters can help. Notch filters that remove the strong source can also help. While you may see front-end overload on your scanner, it is fairly unlikely that is what is happening here with the mall security and the ham repeater.

Finally, real intermodulation: This gets complex, but not too complex if you accept the existence of the 10.7 MHz IF in the radio. Suppose there are two strong transmitters in the area, 10.7 MHz apart. If both transmit at the same time, no matter what their frequency is, they may mix inside your receiver's mixer and generate the 10.7 MHz signal needed by the rest of the radio. Presto -- you hear both, but only when both are on at the same time. Intermod can also happen if the two sources are farther apart -- suppose they are 146.00 MHz apart and you tune your radio to 146.00 MHz. That mixing effect may again create a signal your receiver picks up. Just as with the last two types of interference, intermod can be reduced by better filtering in a narrow-band receiver.

When I've encountered intermodulation, I have heard both signals simultaneously. Since it happens only when both transmitters are active, it may come and go strangely. One radio and location I've used suffers from intermod between a university maintenance repeater and a pager system. The result? Intermittent squeals of pager tone overlaid with maintenance radio traffic.

See? It's not as complicated as it seems. It might be worth checking your scanner's specifications to find out its IF, because that will let you add and subtract it to see if you are seeing imaging, intermod, or front-end overload.

Stephen

— —

Stephen Trier KB8PWA Dave: [H]as anyone ever met a Zamboni driver?
Other: trier@ins.cwru.edu Mike: The next version of OS/2 will include a
Home: sct@po.cwru.edu Zamboni driver. Let's see Microsoft top that!
(dave@cs.arizona.edu & miked@vnet.ibm.com)

Date: 10 Feb 1994 09:44:34 GMT
From: mvb.saic.com!unogate!news.service.uci.edu!usc!cs.utexas.edu!
howland.reston.ans.net!pipex!sunic!EU.net!news.forth.gr!helios.intranet.gr!
phaethon!demetre@network.ucsd.edu
Subject: KENWOOD TH77E VS STANDARD 720
To: ham-equip@ucsd.edu

CQ Netters

Does anyone have comparison data for the Kenwood TH77E and the Standard 720 dual band handhelds ???

Which is better ? why ? can either of them turn their TX off automatically while being used as repeaters ??

Which has more repeater related functions ??

73 's

Date: 11 Feb 94 05:17:00 GMT
From: news-mail-gateway@ucsd.edu
Subject: LOOKING FOR KENWOOD TS-950S OR TS-950SD
To: ham-equip@ucsd.edu

Hi everybody!

I am looking for used Kenwood TS-950S or TS-950SD.
I would rather rig. with manual and carton. Without some trouble!
I hope to get real price. My friend have location in US, now.
Respond please only to my E-mail: rw3aj@glas.apc.org before
20 february.

With the best regards Serge , RW3AJ from Moscow

Date: Mon, 7 Feb 1994 20:25:09 GMT
From: utcsri!newsflash.concordia.ca!sifon!clouso.crim.ca!hobbit.ireq.hydro.qc.ca!

barde!vaillan@uunet.uu.net
Subject: RC-1000 Repeater Controller
To: ham-equip@ucsd.edu

Can anybody give me some comments about the RC-1000 Repeater Controller?
It is sold by Micro Computer Concepts in Florida.
Any comments, good or bad, are welcome.
I would like to use two of them to interconnect on demand a VHF and a UHF
repeater.

Regards,
Clem.
73

Clement Vaillancourt,		Institut de Recherche d'Hydro-Quebec
Analyste,		Varenes, P. Quebec, Canada, J3X 1S1
Informatique scientifique		Tel:+1 514 652 8238 Fax:+1 514 652 8309
vaillan@ireq.hydro.qc.ca		Radio-amateur: VE2HQJ@VE2CRL.PQ.CAN.NA

Date: Tue, 8 Feb 1994 22:25:48 GMT
From: cs.yale.edu!ccsua.ctstateu.edu!white@yale.arpa
Subject: TS430: 80 M RFI problem
To: ham-equip@ucsd.edu

My TS430 has developed a noise problem between 2.700 and 4.300 MHz.
It is a pulse, that the noise blanker does a good job of suppressing
but the wanted signals also get crunched a bit too much. Does this
freq range have any RFI significance? Thx.....
73 de N1QVE Harry

Date: Wed, 9 Feb 1994 02:00:41 GMT
From: ucsnews!sol.ctr.columbia.edu!math.ohio-state.edu!sdd.hp.com!col.hp.com!
srngenprp!alanb@network.ucsd.edu
Subject: Vertical Antennas
To: ham-equip@ucsd.edu

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
: In article <CKvGDJ.GFv@srngenprp.sr.hp.com> alanb@sr.hp.com (Alan Bloom) writes:
: >Consider a vertical dipole in free space. You could insert a horizontal
: >infinite ground plane at the feedpoint without changing the radiation
: >pattern. Now you have two verticals, one pointing up, one pointing down.
: >Each vertical radiates half the power of the original dipole.

: True because each has half the current that flows in the entire dipole.

No, the current is the same, but the power is halved. There are (at least) two ways to see this: 1) Only 1/2 the voltage is applied to each 1/4-wave element. Since power = voltage times current, the power is 1/2.

2) The element is only 1/2 as long. So the same current results in only 1/2 as much power radiated.

Actually, 2) can be derived from 1). (Left as an exercise for the reader :=)

: >Note

: >that the upper vertical (over a groundplane) can generate the same
: >field strength as the dipole (in free space), but with only 1/2 the power.

: No, I disagree with the way you're saying this. The upper vertical in
: this thought experiment has half the current of the dipole and so generates
: half the field. The ground mirror is supplying a 3 db reflection gain that
: makes up for the lower field produced by the current in the upper vertical.

Nope, see above.

: >Now consider a dipole suspended a half wavelength or more over an infinite
: >ground plane. In some directions, it will have 6 dB gain over a dipole
: >in free space, which gives 3 dB gain over the vertical. In other directions,
: >the field will be zero. If you averaged the radiated power over all
: >directions (half sphere), you would find it sums to the same power as the
: >1/4-wave vertical (also averaged over all directions.)

: True, but gain in the main lobe (what we normally mean when we talk about
: gain) is 2X that of the vertical. And in the real world of lossy ground
: planes that make poor current mirrors, the horizontal dipole has a greater
: efficiency.

But to get the 6 dB gain, the dipole depends on ground reflections, just as the vertical does. It gets very complex trying to compare ground losses of ground-mounted verticals versus horizontal dipoles because of the many variables involved (type of earth, number of radials, height above ground, vertical radiation angle, etc. etc.). That's why assuming a perfect ground gives a much more usable standard of comparison.

AL N1AL

Date: Wed, 9 Feb 1994 14:01:42 GMT

From: ucsnews!sol.ctr.columbia.edu!destroyer!gatech!wa4mei.ping.com!ke4zv!
gary@network.ucsd.edu

Subject: Vertical Antennas

To: ham-equip@ucsd.edu

In article <CKxpL6.LKB@srngenprp.sr.hp.com> alanb@sr.hp.com (Alan Bloom) writes:

>Gary Coffman (gary@ke4zv.atl.ga.us) wrote:

>: In article <CKvGDJ.GFv@srngenprp.sr.hp.com> alanb@sr.hp.com (Alan Bloom) writes:

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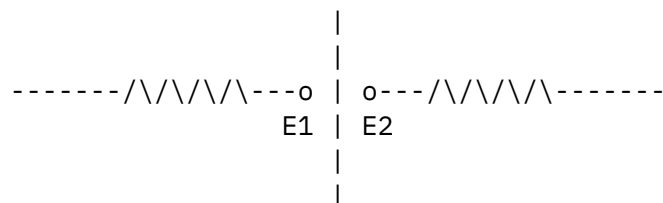
>element. Since power = voltage times current, the power is 1/2.

>2) The element is only 1/2 as long. So the same current results in

>only 1/2 as much power radiated.

Ok, apparently I'm not analyzing this case properly. Here's the way I see it.

Dipole split by infinite ground plane.



If we apply drive to E1-E2, equal currents are driven into each element's impedance. So the halves of the dipole have equal currents flowing in them, but 180 degrees out of phase. With the infinite ground plane isolating the halves, one half has half the total current flow.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

Date: 11 Feb 94 05:10:00 GMT

From: news-mail-gateway@ucsd.edu

Subject: WANTED: Kenwood TS-950SD or TS-950S
To: ham-equip@ucsd.edu

Hi everybody!

I am looking for used Kenwood TS-950S or TS-950SD.
I would rather rig. with manual and carton. Without some trouble!
I hope to get real price. My friend have location in US, now.
Respond please only to my E-mail: rw3aj@glas.apc.org before
20 february.

With the best regards Serge , RW3AJ from Moscow

Date: 8 Feb 1994 03:04:25 GMT
From: dockmaster.phantom.com!lev@uunet.uu.net
Subject: Want Yeasu ft707
To: ham-equip@ucsd.edu

I want a serviceable Yeasu FT707 HF rig.

End of Ham-Equip Digest V94 #28
